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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/728,852	12/01/2000	M.Cameron Watson	NCRC-0021-US(9261)	4243
26890	7590	12/14/2004	EXAMINER MAHMOUDI, HASSAN	
JAMES M. STOVER NCR CORPORATION 1700 SOUTH PATTERSON BLVD, WHQ4 DAYTON, OH 45479			ART UNIT 2165	PAPER NUMBER

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/728,852	Applicant(s) WATSON ET AL.	
	Examiner Tony Mahmoudi	Art Unit 2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


DOV POPOVICI

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Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. In response to communications filed on 09-September-2004, claims 1-9 and 11-31 are presently pending in the application.

Specification

2. The specification is objected to because the arrangement of the disclosed application does not conform with 37 CFR 1.77(b).

Section heading appear underlined throughout the disclosed specification. Section headings should not be underlined. Appropriate corrections are required according to the guidelines provided below:

3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.

Art Unit: 2165

- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 6-8, 11, and 14-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Nazem et al (U.S. Patent No. 5,983,227.)

As to claim 1, Nazem et al teaches a method, comprising:

receiving data to be stored in a database system having plural data servers (see figure 1, "data from data sources" is depicted being received by "page servers 104", and see figure 2,

Art Unit: 2165

where “database system” is depicted as “shared memory 212”, having “plural data servers” , depicted as “servers 230, 232, and 234”);

receiving information associated with at least one characteristic of the data (see Abstract, and see column 2, lines 5-14, where “at least one characteristic of the data” is read on the type of news pages being received, for example, “news, news headlines, sports scores, weather, and the like”);

partitioning the data for storage in the database system based on the characteristic associated with the data (see figure 1, where the data is shown as divided up and stored in various “page server 104”, based on the type (characteristic) of the data, and see column 3, lines 2-7); and

storing the partitioned data in storage units associated with the plural data servers (see figure 1, where “data from data sources” is stored on multiple “page server 104”, and see column 3, lines 36-48, and see column); and

• in response to a database query (see column 4, lines 3-24), selecting less than all the plural data servers based on the positioning of the data to reduce a number of data servers involved in processing the database query (see figures 2 and 6; see column 2, lines 8-14, where “selecting less than all the plural data servers to reduce the number of data servers involved in the processing of the database query” is read on “eliminating the need to make requests from other servers for portions of the live data”; also see column 3, lines 49-58, and see column 6, lines 23-59.)

As to claim 2, Nazem et al teaches wherein receiving the information comprises receiving the information from a client system (see figure 1, where “client system” is depicted as

Art Unit: 2165

“Browser 102” and “User Configuration Database 116”; see column 2, lines 29-30, and see column 2, lines 52-66.)

As to claim 3, Nazem et al teaches wherein receiving the information comprises receiving at least one of an average value of the data, a uniform distribution of the data, a minimum value of the data, and a maximum value of the data (see figure 1, where “data from data sources” is shown being received and distributed by the controller “MY.YAHOO.COM”. It is inherent that “data” includes at least one of “minimum value” or “maximum value”).

As to claims 6 and 21, Nazem et al teaches wherein partitioning the data for storage in the database system comprises dividing the data into buckets containing related data (see figure 2, where “data from data sources” is depicted as divided into “buckets” (sports server 230, stock server 232, and news server 234, and where each “bucket” (server) contains “related data” within the bucket.)

As to claim 7, Nazem et al teaches wherein partitioning the data comprises organizing the data into related portions (see figure 2, where “data from data sources” are shown as “organized” into various servers relating to various topics.)

As to claims 8, 15, and 20, Nazem et al teaches wherein partitioning the data further comprises executing an algorithm to organize the data (see column 1, lines 66-67, where “executing an algorithm” is read on “one process is executed”, and see figure 2, where “data

Art Unit: 2165

is organized” into various “servers”. It is inherent that a computer has to execute a routine/algorithm in order to organize/categorize data into related groups.)

As to claim 11, Nazem et al teaches a system, comprising:

a database (see figure 1);

a network interface (see figure 1, and see column 3, lines 23-35);

plural storage modules and data servers (see figure 1, where “plural storage modules” is read on “data sources”, and “data servers” is read on “page servers 104”);

a database controller coupled to the database (see figure 1, where “database controller” is read on “MY.YAHOO.COM”), wherein the database controller is adapted to receive partitioning information (see figure 1, where the “database controller” (MY.YAHOO.COM) is receiving “data from data sources”) and perform a partitioning task on data received through the network interface based on the partitioning information to partition the data into plural groups (see figure 1, where the data is partitioned by MY.YAHOO.COM into various page servers 104. Also, see figure 2),

the database controller adapted to further store the plural groups of the data partitioned by the partitioning task into plural storage modules associated with corresponding data servers (see figure 2, where “corresponding plural data servers” is depicted as “sports server 230”, “stock server 232”, and “news server 234”),

the database controller (see figure 1, where “database controller” is read on “MY.YAHOO.COM”) adapted to select, in response to a database query, less than all the plural data servers based on the partitioning information to reduce a number of data servers involved in processing the database query (see figures 2 and 6; see column 2, lines 8-14,

Art Unit: 2165

where “selecting less than all the plural data servers to reduce the number of data servers involved in the processing of the database query” is read on “eliminating the need to make requests from other servers for portions of the live data”; also see column 3, lines 49-58, and see column 6, lines 23-59.)

As to claim 14, Nazem et al teaches wherein the database controller comprises:

a query coordinator coupled to the network interface, the query coordinator to receive the database query from the network interface (see column 4, lines 3-24);

a partitioner to partition data and perform selecting of less than all the plural data servers (see figures 2 and 6; see column 2, lines 8-14, where “selecting less than all the plural data servers to reduce the number of data servers involved in the processing of the database query” is read on “eliminating the need to make requests from other servers for portions of the live data”); and

a partitioner data storage coupled to the partitioner, the partitioner data storage to store the partitioning information associated with at least one characteristic of the data to enable the partitioner to partition data (see figure 1, where the data is partitioned by MY.YAHOO.COM into various page servers 104. Also, see figure 2.)

As to claim 16, Nazem et al teaches wherein the plural data servers are adapted to store and access partitioned data in the database (see figures 1 and 2.)

As to claim 17, Nazem et al teaches the system further comprising a client system, wherein the client system sends data to the database through the network interface (see figure

Art Unit: 2165

1, where “client system” is read on “browser 102” which communicates to the “data sources” through the “Internet”.)

As to claim 18, Nazem et al teaches wherein the client system is adapted to further send the partitioning information to be used by the database controller to partition the data (see figures 1 and 2, where the “browser 102”, in communication with the “user configuration database 116” communicate the partitioning information to the database controller (MY.YAHOO.COM), which in turn partitions the data received from the “data sources” into various “page server 104”.)

As to claim 19, the applicant is kindly directed to remarks and discussions made in claim 1 above.

As to claim 22, Nazem et al teaches wherein receiving the information comprises receiving organizational information (see figure 1, where “organizational information” is the “user configurations”, used to “organize” the way the “data from data sources” are stored into different page servers), and wherein selecting less than all the plural data servers is based on the organizational information (see figure 1, where the partitioning based on the organizational information makes it possible to select any one or a combination of the page servers for obtaining desired information.)

As to claim 23, Nazem et al teaches wherein selecting less than all the plural data servers is based on the organizational information (see figure 1, where the partitioning based on the

Art Unit: 2165

organizational information makes it possible to select any one or a combination of the page servers for obtaining desired information) and a characteristic of data requested by the database query (see column 2, lines 5-14, where “at least one characteristic of the data” is read on the type of news pages being received, for example, “news, news headlines, sports scores, weather, and the like”).)

As to claims 24, 28, and 31, it is inherent the step of “selecting at least one more data server to process the database query if the search results are not satisfactory”, can be achieved manually, by the user entering a new/second search and/or by the user modifying his configurations (see Nazem et al, figure 2, “user configuration 206”).)

As to claim 25, Nazem et al teaches partitioning the data (see figures 1 and 2.) As for the step of “wherein partitioning the data comprises partitioning the data into logical groups”, there is no distinction between “partitioning the data” and “dividing the data into logical groups”, since the act of “partitioning” provides a “logic” for how data items are to be separated and stored.

As to claim 26, Nazem et al teaches the method further comprising storing the information by a partitioner, wherein selecting less than all the data select is performed at least in part by the partitioner (see figure 1, where “MY.YAHOO.COM” partitions the data into various “page servers”, and based on the partitions, one/all of the servers are selected in performing the search query for the user.)

Art Unit: 2165

As to claim 27, Nazem et al teaches the database controller to select less than all the plural data servers based on the partitioning information and a characteristic of data requested by the database query (see column 2, lines 5-14, where “at least one characteristic of the data” is read on the type of news pages being received, for example, “news, news headlines, sports scores, weather, and the like”).

As to claim 29, Nazem et al teaches wherein the instructions when executed cause the device to receive information comprising partitioning information (see figure 1, where “partitioning information” is the “user configurations”, used to “partition” the “data from data sources” into different page servers.)

As to claim 30, Nazem et al teaches wherein the instructions when executed cause the device to select less than all the plural data servers based on the partitioning information and a characteristic of data requested by the database query (see figure 1, where the partitioning based on the organizational information makes it possible to select any one or a combination of the page servers for obtaining desired information.)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that said subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nazem et al (U.S. Patent No. 5,983,227) in view of Sinden (U.S. patent No. 6,580,826.)

As to claim 4, Nazem et al does not teach wherein partitioning the data comprises defining straight-line segments based on at least one of the average value of the data, the uniform distribution of the data, the minimum value of the data, and the maximum value of the data.

Sinden teaches a method for encoding handwritten symbols (see Abstract), in which he teaches wherein partitioning the data (see column 4, lines 37-43) comprises defining straight-line segments (see figures 3A and 3B; see column 3, lines 33-38; and see column 4, lines 13-24) based on at least one of the average value of the data, the uniform distribution of the data, the minimum value of the data, and the maximum value of the data (see figure 7; see Abstract; and see column 7, lines 21-37, where “raw data” is received. It is inherent that “raw data” includes at least one of “minimum value” or “maximum value”).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Nazem et al to include wherein partitioning the data comprises defining straight-line segments based on at least one of the average value of the data, the uniform distribution of the data, the minimum value of the data, and the maximum value of the data.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Nazem et al, by the teachings of Sinden, because including wherein partitioning the data comprises defining straight-line segments based on at least one of the average value of the data, the uniform distribution of the data, the minimum

Art Unit: 2165

value of the data, and the maximum value of the data, would enable the system to map different data elements with each other in order to determine a relational partition between the data elements, for fast access within various databases.

As to claim 5, Nazem et al as modified, teaches wherein partitioning the data further comprises defining breakpoints to provide the straight-line segments (see Sinden, figure 4, 5A, and 5B; see column 2, lines 11-16; and see column 4, lines 13-24.)

8. Claims 9 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nazem et al (U.S. Patent No. 5,983,227) in view of Garth et al (U.S. patent No. 6,678,701.)

As to claims 9 and 13, Nazem et al does not teach teaches wherein storing the partitioned data in the database system comprises storing the partitioned data in a relational database system.

Garth et al teaches a system for establishing consistency in parallel databases (see Abstract), in which he teaches wherein storing the partitioned data in the database system comprises storing the partitioned data in a relational database system (see column 3, lines 16-34.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Nazem et al to include wherein storing the partitioned data in the database system comprises storing the partitioned data in a relational database system.

Art Unit: 2165

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Nazem et al by the teaching of Garth et al, because storing the partitioned data in a relational database system, would enable the system to define relationships between elements of each data type and be able to link related data for faster searching of users' queries.

As to claim 12, Nazem et al does not teaches wherein the database is part of a parallel database system.

Garth et al teaches a system for establishing consistency in parallel databases (see Abstract), in which he teaches wherein the database is part of a parallel database system (see figure 1; see column 2, line 64 through column 3, line 15; and see column 4, line 54 through column 5, line 12.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Nazem et al to include wherein storing the partitioned data in the database system comprises storing the partitioned data in a relational database system.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Nazem et al, by the teaching of Garth et al, because wherein storing the partitioned data in the database system comprises storing the partitioned data in a relational database system, would enable the system to execute a search query on various databases in parallel, therefore, increasing the speed of the search. When a database load utility uses parallel processing, each agent load process typically reads from one or more

Art Unit: 2165

input files, loads the data into one or more parts of the database, and writes information to one or more output files, as taught by Garth et al (see column 5, lines 51-56.)

Response to Arguments

9. Applicant's arguments made in the response filed on 09-September-2004 with respect to the rejected claims in view of the cited references have been fully considered but they are moot in view of the new grounds for rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of art with respect to managing and partitioning data in databases in general:

Patent/Pub. No.	Issued to	Cited for teaching
US 5,835,755	Stellwagen Jr.	Partitioning Data in Multiple Data Servers.
US 6,029,141	Bezos et al.	Internet Based Search and Referral System.
US 2002/0010618	Pellegrinelli et al.	Distributing Data in a Partitioned Database.
US 6,631,372	Graham	Weighted Search and Targeted Results.
US 2002/0138487	Weiss et al.	Pre-indexing Web Sites for Searches
US 2002/0152222	Holbrook	Navigation of un-structured List of Data Elements.
US 6,243,361	McMillen et al.	Networked Parallel Point-to-point Data Retrieval.
US 6,654,813	Black et al.	Dynamic Web Searching and Information Retrieval.


Art Unit: 2165

11. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Tony Mahmoudi whose telephone number is (571) 272-4078. The examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici, can be reached at (571) 272-4083.

tm

December 3, 2004


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